

IN THE CLAIMS:

The text of all pending claims are set forth below. Cancelled claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (previously presented), (cancelled), (withdrawn), or (new).

Please CANCEL claims 3 and 12, AMEND claims 1, 2, 4-11, and 13-21, and ADD claims 22-25 in accordance with the following:

1. (currently amended) An apparatus for dynamically determining a flow by means of an action chain in event processing performed in a distributed system, the apparatus comprising:

an action/attribute storage unit for storing information ~~of~~ regarding actions to be executed upon receipt of an event object, separated from a server object; and

a flow control unit for selecting actions to be ignited from the actions stored in the action/attribute storage unit in accordance with a type of the received event object,

~~whereby an action chain is realized by the flow control unit~~

wherein when receiving another event object as the result of execution of the selected action, the flow control unit selects actions to be ignited next and executed from the actions in the action/attribute storage in accordance with a type of the newly received event object so as to dynamically realize a chain of actions.

2. (currently amended) A dynamic flow determination apparatus according to claim 1, wherein the action/attribute storage unit stores ~~a definitions~~ definition of ~~actions~~ an action which ~~are~~ is executed upon reception of an event object, ~~separated~~ separately from a definition of an input pattern which serves as a condition under which the action is selected,

whereby behavior for an event is changed through modification of the definition of the input pattern without necessity of changing the definition or configuration of the action.

3. (canceled)

4. (currently amended) A dynamic flow determination apparatus according to claim 2, wherein ~~not only the type of an event object, but also~~ the value of the event object or the attribute values of the event object, is included in the definition of the input pattern stored in the action/attribute storage unit, whereby ignition of each action is controlled on the basis of the definition of the input pattern.

5. (currently amended) A dynamic flow determination apparatus according to claim 2, wherein the name of an action which is expected to be executed immediately before another action is included in the definition of the input pattern stored in the action/attribute storage unit; and

the flow control unit checks the definition of the input pattern ~~in time of~~ before selection of actions to thereby control the order of actions to be executed.

6. (currently amended) A dynamic flow determination apparatus according to claim ~~3~~ 1, wherein;

the flow control unit stores a list of actions already executed, when the flow control unit selects actions; and

the flow control unit excludes an action or actions which have been executed from actions to be ignited to thereby prevent the flow from forming an endless loop.

7. (currently amended) An apparatus for dynamically determining a flow by means of an action chain in event processing performed in a distributed system, the apparatus comprising:

an action/attribute storage unit for storing definition information regarding ~~each of~~ actions;

a message reception unit for receiving a message;

a message transmission unit for transmitting a message;

an action management unit for changing definition information regarding an action when the received message is a request for changing the definition information regarding the action;

a pattern match processing unit for comparing the contents of a parameter of a message which is received as an action execution request with ~~the~~ information stored in the action/attribute storage unit in order to select matched actions;

an action execution unit for managing execution of the selected action; and

a flow control unit, which is started by the action execution unit upon receipt of an event object, in order to select for selecting actions to be executed next in accordance with a type of the received event object and to execute the selected action for creating a message that is an action execution request in which the address of the flow control unit is designated as a transmission destination address,

whereby the flow control unit repeats selecting an action to be executed next in accordance with a type of the received event object.

8. (currently amended) A method for dynamically determining ~~flows~~ a flow by means of an action chains chain in event processing performed in a distributed system, the method comprising:

~~processing dynamically event without affecting other actions than a selected action in a server object by separating actions to be implemented upon receiving actions from the server object;~~

~~selecting actions to be ignited in accordance with a type of the received event object,~~
and

~~implementing the actions~~

receiving a message that is an action execution request from an agent;

checking whether an action has a name designated by a parameter in an action/attribute storage unit which stores information regarding actions to be executed upon receipt of an event object, separated from a server object; and

executing the action when the action is present in the action/attribute storage unit, otherwise selecting actions to be ignited from actions stored in the action/attribute storage unit in accordance with a type of the received event object;

wherein, when receiving another event object as the result of execution of the selected action, repeating the execution of the action and selection of actions to be ignited in accordance with a type of the newly received event object so as to dynamically realize a chain of actions.

9. (currently amended) A computer readable medium storing a program to operate as an apparatus for dynamically determining a flow by means of an action chain in event processing performed in a distributed system, the program causing the ~~computer~~ apparatus to

perform a method comprising:

~~message reception processing for receiving a message;~~

~~message transmission processing for transmitting a message;~~

~~action management processing for changing definition information regarding an action~~

when the received message is a request for changing the definition information regarding the action;

~~pattern match processing for comparing the contents of a parameter of a message which is received as an action execution request with a pattern for selection of an action in order to select a matched action~~ actions;

~~action execution processing for managing execution of the selected action; and~~

~~flow control processing which is started unit upon receipt of an event object, selecting to select actions to be executed next in accordance with a type of the received event object and to execute the selected action,~~

wherein the processing for selecting an action to be executed next in accordance with a type of the received event object is repeated so as to dynamically realize a chain of actions.

10. (currently amended) An apparatus for dynamically determining a flow by means of an action chain in event processing performed in a distributed system, the apparatus comprising:

action/attribute storage means for storing information ~~of regarding~~ actions to be executed upon receipt of an event object, separately separated from an object, a server object; and

flow control means for selecting ~~an action~~ actions to be ignited from the actions stored in the action/attribute storage means in accordance with a type of the received event object, ~~whereby the action chain is realized by the flow control means~~

wherein when receiving another event object as the result of execution of the selected action, the flow control means selects actions to be ignited next and executed from the actions in the action/attribute storage in accordance with a type of the newly received event object so as to dynamically realize a chain of actions.

11. (currently amended) A dynamic flow determination apparatus according to claim 10, wherein the action/attribute storage means stores a definition of an action which is executed

upon reception of an event object; separately from a definition of an input pattern which serves as a condition under which the action is selected,

whereby behavior for an event is changed through modification of the definition of the input pattern without necessity of changing the definition or configuration of the action.

12. (cancelled)

13. (currently amended) A dynamic flow determination apparatus according to claim 11, wherein ~~not only the type of an event object, but also~~ the value of the event object or the attribute values of the event object; is included in the definition of the input pattern stored in the action/attribute storage means, whereby ignition of each action is controlled on the basis of the definition of the input pattern.

14. (currently amended) A dynamic flow determination apparatus according to claim 11, wherein the name of an action which is expected to be executed immediately before another action is included in the definition of the input pattern stored in the action/attribute storage means; and

the flow control means checks the definition before selection of actions to thereby control the order of actions to be executed.

15. (currently amended) A dynamic flow determination apparatus according to claim ~~12~~ 10, wherein;

the flow control means stores a list of actions already executed, when the flow control means selects actions; and

the flow control means excludes an action or actions which have been executed from actions to be ignited to thereby prevent the flow from forming an endless loop.

16. (currently amended) ~~A dynamic flow determination~~ An apparatus for dynamically determining a flow by means of an action chain in event processing performed in a distributed system, the apparatus comprising which comprises:

action/attribute storage means for storing definition information regarding ~~each of~~ actions;

message reception means for receiving a message;

message transmission means for transmitting a message;

action management means for changing definition information regarding an action when the received message is a request for changing the definition information regarding the action;

pattern match processing means for comparing the contents of a parameter of a message which is received as an action execution request with the definition information stored in the action/attribute storage means in order to select matched actions;

action execution means for managing execution of the selected action; and

flow control means, which is started by the action execution means upon receipt of an event object, ~~in order to select for selecting~~ actions to be executed next in accordance with a type of the received event object and ~~to execute the selected action for creating a message that is an action execution request in which the address of the flow control unit is designated as a transmission destination address,~~

whereby the flow control means repeats selecting an action to be executed next in accordance with a type of the received event object.

17. (currently amended) A distributed system, comprising:

a dynamic flow determination apparatus which processes events cooperatively with another apparatus in a distributed system one or more other apparatuses, wherein:

each apparatus keeps actions and attributes defined separately from ~~another apparatus~~ the other apparatuses;

~~the~~ a dynamic flow of actions is determined through selection of actions corresponding to an input event; and

when receiving an event object as the result of execution of a selected action, a flow control unit selects actions to be next activated and executed from actions in an action/attribute storage in accordance with a type of the event object.

18. (currently amended) ~~A dynamic flow determination apparatus~~ The distributed system according to claim 17, wherein different input patterns are defined for an event, and each of the different input ~~pattern~~ patterns corresponds to each of the different action of the event, thus the dynamic flow of actions for an event is determined.

19. (currently amended) ~~A dynamic flow determination apparatus~~ The distributed system according to claim 17, wherein, when an executed result of an action is returned, ~~further~~ another action is determined through the input pattern of an event ~~followed to~~ following the result of the action.

20. (currently amended) ~~A dynamic flow determination apparatus~~ The distributed system according to claim 17, wherein ~~attributes an attribute~~ an attribute value of the action is defined for an event, so that the chain in dynamic flow of the action is controlled through the definition.

21. (currently amended) ~~A dynamic flow determination apparatus~~ The distributed system according to claim 17 wherein a name of an action which is expected to be executed before the action is listed, so that the dynamic flow of action is determined through referencing the action name in time of selection of the action.

22. (new) A dynamic flow determination apparatus according to claim 1, wherein:
the flow control unit creates a message that is an action execution request in accordance with the selected actions and
the message has information that the flow control unit is set as a transmission destination for another message that includes an event object resulting from the selected actions.

23. (new) A dynamic flow determination apparatus according to claim 10, wherein:
the flow control means creates a message that is an action execution request in accordance with the selected actions and
the message has information that the flow control means is set as a transmission destination for another message that includes an event object resulting from the selected actions.

24. (new) A method of operating an action execution unit implemented in a data processing system, comprising:
receiving a first execution request having an event object; and
in response to receiving the first execution request, starting a flow control unit.

25. (new) A method of operating a computer code execution module in a data processing system, comprising:

- in response to receiving a request to perform a function, creating a code selection unit
- that determines and provides code based on the function; and
- executing code provided by the program selection unit.